

Notice of Allowability

Application No.

09/939,087

Examiner

Brian J. Sines

Applicant(s)

FREEMAN, ALEX REDDY

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the response filed 1/6/2005.
2. ☒ The allowed claim(s) is/are 1-12, 14, 15, 19-37, 40 and 42-62.
3. ☒ The drawings filed on 8/24/2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments and amendments, filed 1/6/2005, with respect to each of the rejections in the office action, mailed 3/29/2004, have been fully considered and are persuasive. Therefore, each of these rejections have been withdrawn. Furthermore, the amendments to the specification have been accepted.

Allowable Subject Matter

Claims 1 – 12, 14, 15, 19 – 37, 40 and 42 – 62 are allowed.

The following is an examiner's statement of reasons for allowance:

Demers (US 5,879,632) teach a microfluidic apportioning apparatus and an associated method for using the disclosed apparatus for distributing fluid to one or more microplates containing a plurality of wells.

Regarding claims 1 and 22, the cited prior art neither teach nor fairly suggest the further incorporation of a first substrate having at least one peak or a structural equivalent protruding from the second surface of the first substrate, wherein the at least one through-hole of the first substrate is in fluid communication with the tip of the at least one peak.

Regarding claim 47, the cited prior art neither teach nor fairly suggest a method of transferring samples between first and second substrates, wherein the method comprises the steps of: loading a first liquid into a plurality of microfluidic through-holes disposed in the first substrate, wherein the first liquid is retained within the through-holes; loading a second liquid into a plurality of microfluidic through-holes disposed in the second substrate, wherein the second liquid is retained in the through-holes; and transferring the first liquid in the first

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substrate into the through-holes of the second substrate induced by meniscus contact between the first and second liquids and an applied force.

Regarding claim 55, the cited prior art neither teach nor fairly suggest a method comprising the steps of: loading a first test sample into a plurality of microfluidic through-holes disposed in the first substrate, wherein the first sample is retained within the through-holes; loading a reagent into a plurality of microfluidic through-holes disposed in the second substrate, wherein the reagent is retained within the through-holes; and transferring the reagent in the second substrate into the through-holes of the first substrate induced by an applied force; positioning and aligning a third substrate having a plurality of microfluidic through-holes with the microfluidic through-holes of the first substrate and forming a fluid-conducting channel in fluid communication with the through-holes of the first and third substrates between the first and third substrates; and flushing the test sample reagent mixture in the through-holes of the first substrate with a washing liquid introduced into the through-holes of the third substrate.

Regarding claim 59, the cited prior art neither teach nor fairly suggest a method of preparing samples, wherein the method comprises the steps of: introducing an array of samples into a first substrate retained thereby by various fluid imbalance forces; positioning a second substrate adjacent the first substrate and receiving an array of spots of samples therefrom onto the second substrate; positioning a third substrate adjacent the second substrate to further create another array of samples on the second substrate; repeating the above step with additional substrates to build a library of samples on the second substrate; and positioning and aligning the second substrate with the library of samples adjacent to an assay reagent substrate having an array of assay reagents.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Sines whose telephone number is (571) 272-1263. The examiner can normally be reached on Monday - Friday (11 AM - 8 PM EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jill Warden
Supervisory Patent Examiner
Technology Center 1700